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Nota di contenuto	Alain A. Vertès, Masayuki Inui, and Hideaki Yukawa: The biotechnological potential of Corynebacterium glutamicum, from umami to chemurgy -- Miroslav Patek, Jan Nesvera: Promoters and Plasmid Vectors of Corynebacterium glutamicum -- Nobuaki Suzuki, Masayuki Inui: Genome engineering of Corynebacterium glutamicum -- Masato Ikeda, Seiki Takeno: Amino Acid Production by Corynebacterium glutamicum -- Toru Jojima, Masayuki Inui, Hideaki Yukawa: Biorefinery Applications of Corynebacterium glutamicum -- Volker F. Wendisch, Tino Polen: Transcriptome/proteome analysis of Corynebacterium glutamicum -- Judith Becker, Christoph Wittmann: Pathways at Work – Metabolic Flux Analysis of the Industrial Cell Factory Corynebacterium glutamicum -- Jasmin Schröder, Andreas Tauch: The transcriptional regulatory network of Corynebacterium glutamicum -- Haruhiko Teramoto, Masayuki Inui: Regulation of Sugar Uptake, Glycolysis, and the Pentose Phosphate Pathway in Corynebacterium glutamicum -- Michael Bott, Bernhard J. Eikmanns: TCA cycle and glyoxylate shunt of Corynebacterium glutamicum -- Kazunobu Matsushita: Respiratory Chain and Energy Metabolism of Corynebacterium glutamicum -- Masaaki Wachi: Amino acid exporters

in *Corynebacterium glutamicum* -- Alain A. Vertès: Protein Secretion Systems of *Corynebacterium glutamicum* -- Michal Letek, Maria Fiuza, Almudena F. Villadangos, Luis M. Mateos, Jose A. Gil: Cell division mechanism of *Corynebacterium glutamicum*.

Sommario/riassunto

Corynebacterium glutamicum was discovered in Japan in 1956 as a natural glutamate producer. Its “microbial factory” qualities, such as its physiological plasticity and robust catalytic functionalities, have since facilitated the development of efficient production processes for amino acids, nucleotides and vitamins. This monograph illustrates how the information gleaned from complete genome sequencing allows the rational engineering of the entire cellular metabolism and how systems biology permits the further optimization of *C. glutamicum* as a biocatalyst. Aspects of gene regulation, metabolic pathways, sugar uptake, protein secretion, cell division and biorefinery applications highlight the enormous biotechnological and biorefinery potential.
